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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/808,329	03/25/2004	Kazuaki Sumita	0171-1077PUS1	5424

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EXAMINER
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SELLERS, ROBERT E

ART UNIT	PAPER NUMBER
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1712

DATE MAILED: 03/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/808,329

Applicant(s)

SUMITA ET AL.

Examiner

Robert Sellers

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 February 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 and 4-7 is/are pending in the application.
- 4a) Of the above claim(s) 4-6 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

Claims 4-6 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected inventions, there being no allowable generic or linking claim. Election was made **with** traverse in the non-Final rejection mailed September 22, 2005 and has not been traversed in the amendment filed February 22, 2006.

1. The specification on page 9, lines 14-16 describes the molar ratio of epoxy resin to aromatic amine of from 0.7/1 to 0.9/1, preferably from 0.7/1 to 0.85/1 which includes the denominator. The deletion of the ethyl and butyl ether acetates of diethylene glycol from page 11, lines 22-24 eliminates the redundancy with the monoethyl and monobutyl species.

2. The 35 U.S.C. 103(a) as being unpatentable over Japanese '366 in view of Japanese '259, Qi et al., Japanese '267 and Bolger is rescinded since Japanese '366 discloses a molar ratio of epoxy resin to aromatic amine of as low as 0.9:1 (page 2, paragraph 9, lines 1-4) precluded by the claimed maximum of less than 0.9:1 as supported by page 9, line 15 of the instant specification. The maximum molar ratio is a result-effective variable achieving a toughness  $K_{Ic}$  within the claimed at least 3.5 according to page 9, lines 20-22 unrecognized in the references (MPEP § 2144.05, II. Optimization of Ranges, B. Only Result-Effective Variables Can Be Optimized).

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. The bisphenol and naphthalene epoxy resin are not concisely denoted by the term "type" embracing modifications and derivatives not contemplated.

4. The structure for the m-phenyl diglycidyl ether is not completely defined in the absence of a value for x of  $R^9_x$ . Page 6, line 22 sets forth x as from 1 to 4.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1 and 7 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 and 2 of copending application no. 10/618,765 in view of Japanese Patent Nos. 2002-121259, Qi et al. Patent No. 5,371,279; Japanese Patent No. 5-140267 and Bolger Patent No. 5,840,417. Although the conflicting claims are not identical, they are not patentably distinct from each other for the reasons espoused in the non-Final rejection, pages 4-6.

The rejection is maintained since no arguments addressing specific aspects of the references have been presented on page 7 in the Remarks section of the amendment.

Claims 1 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese '259 in view of Qi et al., Japanese '267 and Bolger in view of Japanese Patent No. 60-92318.

5. Japanese Patent Nos. 10-158366 (page 2, paragraph 9, lines 1-4) and 9-176294 (page 2, paragraph 6, lines 10-16) are withdrawn since the disclosed molar ratio of epoxy resin to aromatic amine of as low as 0.9:1 is precluded by the claimed maximum of less than 0.9:1. The maximum molar ratio is a result-effective variable achieving a toughness  $K_{Ic}$  within the claimed at least 3.5 according to page 9, lines 20-22 unrecognized in the references (MPEP § 2144.05, II. Optimization of Ranges, B. Only Result-Effective Variables Can Be Optimized).

The rejections are maintained for the reasons of record set forth in the non-Final rejection. The arguments filed February 22, 2006 have been considered but are unpersuasive.

6. Japanese '259 (page 4, paragraph 17) reports an equivalent addition of the diaminodiphenyl sulfone relative to the epoxy resin. However, as much as double the equivalent is acceptable if the property of the hardened material is not spoiled even if it is not desirable. Japanese '259 is not strictly bound to an equivalent ratio of diaminodiphenyl sulfone to epoxy resin. Therefore, it would have been obvious to employ the diaminodiphenyl sulfone of Japanese '259 at a molar ratio of as little as 0.8:1 of Japanese '318 in order to optimize the degree of curing.

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7. Qi et al., Japanese '267 and Bolger are relied upon as secondary references to teach esters solvents within claimed general formula (4) (Qi et al., Japanese '267 and Bolger) and the claimed epoxy resin to aromatic amine molar ratio (Japanese '318). The secondary references each set forth organic solvent-based curable epoxy resin compositions analogous to that of Japanese '259.

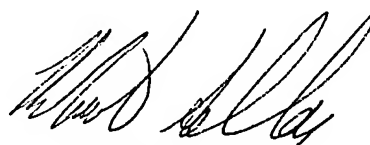
8. Secondary references need not recite each and every claimed feature; otherwise they would be applicable as primary references. Based on the equivalent formulations of Japanese '259 along with Qi et al., Japanese '267, Bolger and Japanese '318, it would have been obvious to use a particular high boiling solvent of Japanese '259 such as the acetate solvents of Qi et al., Japanese '267 and Bolger in order to regulate the viscosity while reducing rapid dryout during processing, within the proportion range of Japanese '259 to achieve a balance between optimal viscosity and the prevention of seepage (Japanese '259, pages 4-5, paragraph 19).

The amendment necessitated the new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert Sellers whose telephone number is (571) 272-1093. The examiner can normally be reached on Monday to Friday from 9:30 to 6:00. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at (866) 217-9197 (toll-free).



Robert Sellers  
Primary Examiner  
Art Unit 1712